

~~SECRET~~Dong Anh Electric Power SubstationSummary

The Dong Anh power substation is a vital component of the electric power facilities serving the city of Hanoi. It furnishes the means of delivering almost 40 percent of Hanoi's power supply. The substation is located in relative isolation from populated areas. Destruction of the substation at this time would greatly intensify a shortage of power that resulted from air strikes in April 1966 against the Uong Bi Thermal Powerplant.

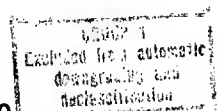
Description and Location

The Dong Anh substation provides the only link between the 110 kilovolt (kv) power transmission network and the city of Hanoi. It is located in relative isolation from populated areas, 6 or 7 miles north of the city (21-08N; 105-50E). The substation contains a 110-kv switching yard, a 35-kv switching yard, a possible standby diesel powerplant, three POL storage tanks, and a single transformer estimated to have a capacity of 20 to 25 megawatts (mw). The transformer ties together the two switching yards, forms the only link between the 110-kv and 35-kv transmission lines, and limits to about 25 mw the amount of power that the city of Hanoi can draw from the main transmission network.

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Economic Significance

Due to loss of generation from the Uong Bi Powerplant, it is estimated that currently only about 15 mw is available to Hanoi from powerplants at Viet Tri and at Thai Nguyen, through the Dong Anh substation. The normal steady power demand in Hanoi is on the order of 40 mw, with peak loads somewhat higher. Although the Hanoi thermal powerplant has a nameplate capacity rating of 32 mw, the poor condition of some of the installed equipment restricts firm output to about 24 mw. Thus, local generation of 24 mw and the 15 mw available from the main transmission network nearly covers normal demand, but is inadequate to cover peak loads. Since late April 1966 this deficit has resulted in inadequate reserve generating capacity to cover all demands without restricting use of power by some non-essential consumers. It is probable that load-shedding is mandatory during peak-load periods, and that specific classes of consumers such as residences, commercial enterprises, and public transportation are denied service only at these times. It is not likely that power supply to industry and to essential services has as yet been curtailed significantly.

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Destruction of the Dong Anh substation would reduce available power supply to Hanoi by almost 40 percent. Hanoi would be forced to rely on the local powerplant which, in view of its age and generally poor condition, probably would be severely taxed to provide even 24 mw in sustained operation. Given the usual technical requirement for some portion of generating equipment to be held as standby, it is probable that no more than one-half of the 40 mw currently available to Hanoi could actually be put on load.

Recuperability

Restoration of the components within the Dong Anh substation would require foreign technical assistance and materials that undoubtedly are in short supply. Under optimum conditions it is unlikely that operation of the facility could be fully restored in less than two months. There is a high prospect that the period of restoration would be considerably longer. On the other hand, the importance of this facility to Hanoi may result in a crash effort at partial restoration. In such an event, the most rapid course would be to cannibalize equipment from some other operating substation for use at Dong Anh, but not without detriment to the substation cannibalized. Even with a crash effort, however, it is unlikely that Dong Anh could be restored partially in less than two weeks.

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